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**CLAIMS**

1. A method for fast recovery of a host connection in a redundant tree structured local area network, characterised in that the method comprises the steps of:

monitoring the state of a critical up-link,  
setting a dependent down-link in a link-down state, if said critical up-link is detected to be in a link-down state.

monitoring the state of a active up-link in the host device, and

starting a recovery process in a host device if said active link is in the link-down state,

2. The method according to claim 1, characterised in that specifying the up-link of a network element being a critical up-link, if the failure of said link affects the data flow of a down-link of said network element.

3. The method according to claim 1, characterised in that specifying the link of a network element being a dependent down-link, if there is a critical up-link between said down-link and the next network element.

4. The method according to claim 1, characterised in that the recovery process comprises the steps of:

notifying the host software of the link failure in the active up-link, and

changing the active data path to the redundant up-link.

5. The method according to claim 1, characterised in that the recovery process comprises the steps of:

notifying the host software of the link failure in the active up-link,

checking the status of the redundant up-link, and if said up-link is in link down state,

transferring said host to the predetermined default mode operation.

6. The method according to claims 4 or 5, characterised in that said redundant up-link is a doubling up-link for said active up-link.

7. The method according to claim 1, characterised in that monitoring the state of a critical up-link is accomplished by monitoring the quality of the data flow on the link.

8. A system for fast recovering of a host connection in a redundant tree structured local area network, characterised in that the system comprises

a monitoring device (EC) for monitoring the state of a critical up-link, for setting a dependent down-link in a link-down state, if said critical up-link is detected to be in a link-down state and for starting a recovery process in a host device if said active link is in the link-down state.

9. The system according to claim 8, characterised in that said monitoring device (EC) further comprises

a physical layer device (PHY) for monitoring the physical state of said up-link, and

a media access controller (MAC) for changing the state of the down-link.

10. The system according to claim 8, characterised in that the up-link of a network element (SW1, ..., SW8) is a critical up-link, if the failure of said link affects the data flow of a down-link of said network element.

11. The system according to claim 8, characterised in that the link of a network element (SW1, ..., SW8) is a dependent down-link, if there is a critical up-link between said down-link and the next network element (SW1, ..., SW8).

12. The system according to claim 8, characterised in that said monitoring device (EC) is an Ethernet controller.